Sutton Bridge Lincolnshire

March. 20. 1897.

Mr. Chairman and Gentlemen

I am directed by the Local Government Board to make a supplemental report in respect of the past year giving such information as to the sanitary state of the district especially in such matters as Water supply. drainage and excremental disposal. Any one familiar with the district knows such that there is no public water supply other than six pumps belonging to the District Council. One of these draws water from a rain-water cistern supplied by the water off a granary roof. another is out of repair and use less the others from shallow wells. Besides these there are numerous private pumps and wells, and almost every house has its rain water cistern. The wells are shallow, and are not puddled, so that the water is drawn from near the surface of the porous bed of silt. Into this bed percolate the foul liquid contents of privy-vaults and "dry-wells" so that filtration through a few feet of porous sand is relied on to transmute foul sewage into potable water. The rain-water cisterns are underground. They are of brick, set in cement, with arched roof and inlet. One for a cottage would contain from 500 to 1000 gallons. The cost of one holding 600 gallons is stated to be about £3. The lids are frequently on a level with the yard surface, so that when the yard is washed there is a danger of the dirty water finding its way into the cistern under the edges of the lid.

In one instance where want of room cannot be pleaded as an excuse the cistern is only 7 feet from a cesspool which receives the contents of a watercloset. A facing of cement cannot be trusted to stand against a pressure of water behind it, so that when the water in such cisterns is low, leakages from the subsoil into the cistern are likely to occur. In one or two cases I have recorded complaints that the water in the cistern was unfit to drink through contamination

with the drainage from a neighbouring privy-vault.
In dry weather there is a scarcity of water, and
rain water is sold at the rate of three bucketfuls for a
penny. During the life of the late Local Board
three samples of water were taken and analysed one
from a pump on the south side of the high road near the
Salutation Inn. This pump is supplied from a shallow-covered
well by the roadside. There is a stagnant ditch within eight yds close by
and no proper drainage to carry away the waste water from the
pump, while the nearest privies are about 30 yards away.
The second sample of water was taken from a pump by the
Primitive Methodist Chapel. There are four vault privies
within a radius of 15 yards from the well from which this sample
was drawn, the nearest being only 8 yards distant.
The third sample was taken from the pump at the east end
of Wharf St., behind the Bridge Hotel. This pump draws water
from an underground cistern supplied by the rain which falls
on the roof of the neighbouring granary.
These samples were forwarded to Dr Dupré at the West-
minster Hospital London Nov 29. 1879 and as might be expected
the first and second were so highly charged with mineral and
organic impurities as to be unfit for drinking, and from their
excessive hardness, unsuitable for many domestic purposes.
The third His report upon them ran as follows:—
Samples i and ii are excessively hard, owing to the large amount
of lime and magnesia salts, both sulphates and carbonates, they
contain: lime salts predominating in No i. magnesia salts in
No ii. The total dry residue amounts to 112 and 91.14 grains per
gallon respectively, and this would of itself be sufficient to render the
waters unsuitable for drinking, as well as for nearly all culinary and
other domestic purposes. In addition to this they are largely
contaminated by organic matter (in No i this appears to be chiefly
of vegetable origin, while in No ii it is in great measure at least
animal) as evidenced by the somewhat large proportion of oxygen

absorbed from permanganate, the extremely high proportion of ammonia, and of albuminoid ammonia, and in No ii the large amount of Nitric acid. The deposit in both Waters is almost entirely mineral, in No i hydrated oxide of iron chiefly. Both Waters are totally unfit for drinking.

No iii is a very soft water, of moderate purity, and free from any dangerous degree of pollution by sewage or surface draining - on standing it yields, however, a minute trace of deposit containing numerous minute animalcula, and a variety of algæ, and should therefore not be used for drinking without previous careful filtration. After such filtration it will constitute a fairly good water.

That people have for years used Waters of the character of number 1 and 2 for drinking without obvious ill effects, does not prove that it is safe or wise to do so. Apart from the repulsiveness of the idea of drinking Water contaminated with excremental and other filth, it cannot be guaranteed that Wells so contaminated may not at any time receive the specific infection of typhoid fever, cholera, and other diseases, which in that case, are liable to be propagated wholesale among those who drink it.

There is not, unfortunately, any source of water within the district suitable for a public supply. There is no stream but the brackish tidal Nene or ~~the~~ South Holland drain. From the geological structure of the district which I have carefully studied during the sinking of the foundations for the new bridge over the river Artesian borings would probably be difficult to carry out, and have little prospect of success.

The only other probable source of a good public supply would be to purchase Water by meter from the Wisbech Water Company ~~as at present~~. The Urban District Councils of Sutton Bridge, Long Sutton and Holbeach could unite for the purpose of a common ~~Water~~ supply†. The population of these

† Public Health Act cl. 51.

towns are about respectively

Sutton Bridge	2200
Long Sutton	2500
Holbeach	3000
	7700

And allowing for the houses in the parishes of Fleet and Gedney on the main road between Holbeach and Long Sutton on which the pipes would be laid the total population may be taken at about 8000.

The Parliamentary limits of the Wisbech Waterworks Company extends in the direction of Sutton Bridge to the boundary of the parishes of Walpole St. Peter's and Walpole St. Andrew's, arrangements would have to be made with them to deliver daily at this point a sufficient quantity of water in bulk to meet the requirements of the new district to be supplied. From this point the water, after passing through a meter, could be brought to Sutton Bridge through a pipe having an inverted syphon under the river and discharging into a tank sufficiently high to allow the water to flow by gravitation into the several houses. A line of pipes could then be continued along the main road to Holbeach, passing through Long Sutton, and having branch pipes to distribute the water in the various streets.

The Wisbech Waterworks Company at present supply the town of Wisbech direct from their pumping station during the day, and thus provision in the size of the mains should be made so that when the supply for this new district became more extended, and pumping became necessary during longer hours to meet the supply, more storage room could be obtained by erecting a second tank at some convenient place between Sutton & Holbeach.

The works which at first would be necessary would consist of 11,550 yards of 9" pipe, 8,140 of 6" and 6600 of 3". An inverted syphon under the bed of the river Nene, and a tower at Sutton Bridge with tank capable of holding 40 000 gallons. The total cost of which, including 10 % for contingencies, has been

estimated at £13,430 for the three districts.

Allowing 15 gallons of water per head of the population to be supplied the quantity required would be 120,000 gallons daily. Only half this quantity, as the actual consumption however would, in all probability, be found sufficient for the first few years after the works were completed.

In fixing the rate per 1,000 gallons to be paid for the water delivered by the Ribbesh Company a minimum daily quantity would have to be determined upon to repay them interest on the outlay in extending their mains, and also to cover working expenses. For the purposes of this Report I have taken this minimum quantity at 60,000 gallons daily, and find that this could in all probability be ~~obtained~~ obtained at the rate of 4d (~~per thousand gallons~~) per 1000 gallons.

These works can be carried out ~~by~~ either by the Urban District Councils under the powers of the Public Health Act 1875 Clause 61, or by a private Company under Parliamentary powers.

To be continued with Overleaf

Passing to the subject of drainage, sewerage and drainage

Sutton Bridge, as you know, possesses only a very second rate system of drainage for the surface or road water and this in a very imperfect condition. Originally the fall of these pipes was towards the dock; upon the construction of this unfortunate undertaking an outlet for the surface drainage was made in the opposite direction where it now is, Consequently the contents of the pipes are expected to flow up hill; no wonder then that this system does not succeed which is contrary to the laws of physics and the gravity of liquids. The whole system is therefore generally blocked and in want of some means of flushing. The outlet is only about 50 yards from the town and empties into an open ditch which runs a great distance and whilst the liquid portion either soaks into the ground or evaporates the solid is left as a thick black shining mass to the annoyance of the residents in the locality.

The liquid refuse of the houses ie. the slops and sink-water is mostly thrown upon the ash heaps, into cesspools, or even upon the road side.

The late Local Board once endeavoured to adopt some system of drainage as required under section 15 of the Public Health Act which prevented there was, I believe, the question of an outfall. The only available outfall, without pumping, is the into the ~~River~~ River Nene. They made application to the River Nene Commissioners for permission to make an outfall sluice into the river, but had hitherto been unable to gain such permission, and were advised that without it under section 327 of the Public Health Act they had no power to make use of the river as an outfall. The Sanitary Authority were in doubt whether, even if the assent of the Commissioners were obtained, it would be legal to discharge sewage into a river without previous purification. Apart from the question of legality, and looking at the matter only from a sanitary point of view, the use of the River Nene as an outfall does not seem open to objection, since the muddy and brackish waters of the river are not used for drinking or domestic purposes; while the volume of water is so large and the tide so rapid that it does not seem possible that the amount of sewage that would be likely to be poured into it from Sutton Bridge could cause a nuisance

There is said to be a touch 13 feet of fall from the surface of the ground at the further end of the district to mean low-water mark in the River Nene at the bridge, a distance of over a mile.

~~To make~~ To give you some idea of the cost of a system of sewerage for a district of this size I will quote the figures of the cost of the sewerage of East Dereham, Norfolk which has a population of 6000 against our 2000 some few hundred.

"Contract for pipes, manholes, excavating, and laying, 3,484 - 14 - 3
Four acres one rood two poles for irrigation, & surveyors, and arbitration. 794 - 12 - 1
Draining and preparing the ground. 493 - 10 - 8
Compensation for disturbance 88 - 7 - 10
Engineer's Commission. 100 - 0 - 0

£ 4911 - 4 - 10

The present system for disposal of excrement is ~~xxxxx~~ that of the privy vault, there are a few middens and one or two Water closets. Many of the vaults are not as well ventilated as I think they might be. Owing to the small amount of yard space with which many of the houses are provided, the privies are often too near the houses, in many cases they are close to the back doors.

The ashes and house refuse are either thrown into ash pits or bins, generally open, or where these are not provided, into heaps in some corner of the premises. The ash pits ~~are~~ frequently overflow. I would strongly recommend that the ash pits be supplied with good covers rendering them free from becoming wet with rain, this would take much of the unpleasant odour which arises therefrom and certainly be better for the scavenger who has to empty them. I have seen several ash pits in a filthy state in this district simply because they are under an unguttered roof so that they catch the rainfall.

8

There remains yet one other insanitary matter which is seldom brought before a Sanitary Authority I refer to the Swill-tub which contains a large amount of scraps of food which in any Country but England would be utilized for human consumption. The swill tub is mostly a wooden tub which becomes saturated from a fermenting mass of food-scraps and sour milk rendering it a "fruitful soil for the growth of various putrefactive and disease germs" because it is seldom washed out or cleansed in any way for weeks or even months together. Alas! the poor pig has for some time to content himself upon such victuals; why then should there be that wonder at so many outbreaks of Typhoid-fever!! The swill tub, then, should be of galvanised iron, kept in the open air, at least 20 yards from the house, and should be well washed and scalded from "time to time"; it should also be less thrown into it thus the pig would be more carefully dilled and which we should hear less of typhoid fever.

In conclusion, I must ~~finally~~ draw your attention, as I have ~~before~~ done before, on several occasions to the requirements of Byelaws in the district. I cannot do better than quote the concluding words of a letter I received from the Local Government Board viz.

"I am to add that the Board are still of opinion that the Byelaws in force
"in the district are open to the objections specified in their letter of the
"13th October 1893, and that they consider it to be your duty as
"Medical Officer of Health, under Article 18. (5) of their Order
"dated the 23rd March 1893 to advise the Urban District Council
"as to the sufficiency of the Byelaws for the purposes of health.

I am Mr Chairman and Gentlemen
Yours most respectfully
R. Hinslowe Wellington
M.R.C.S.

4 JUN. 1897